

Inventor: Ross
Serial No.

STATUTORY INVENTION REGISTRATION
Navy Case No. 76,736

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ABSTRACT OF THE INVENTION

10 A digital preemphasizer that provides a means for high
fidelity reconstruction, i.e. low, acceptable bit error-rate, of
an original pulse code modulation (PCM) serial stream binary data
signal which has suffered degradation of fidelity, and consequent
increase in bit-error-rate, during transmission on a single
channel from a transmitter to a receiver, connected to each other
15 by a transmission line exhibiting both resistive and frequency
dependent loss. This is accomplished prior to transmission by
amplitude encoded digital pre-emphasis of each bit of the
original binary data signal to be transmitted in such
manner as to mitigate or remedy the signal degrading frequency
20 dependent losses concomitant with the signal transfer network
characteristics of the fixed transmission line. Subsequent to
this pre-emphasis process, the amplitude encoded signal is
transmitted to the receiver connected to the other end of the
fixed transmission line. Compared to a conventional transmitter,
25 transmission line, and receiver system, the end result of
amplitude encoded pre-emphasis is superior reconstructed fidelity
and quality of the PCM waveform, i.e. lower bit-error-rate, at
the output of the receiver for the same length of transmission
line or, alternatively, a longer transmission line for the same